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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : <b>C12N 15/12, C07K 14/705, 16/28, C12N 5/20</b>		<b>A3</b>	(11) International Publication Number: <b>WO 97/22698</b>
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(30) Priority Data: 08/575,967 20 December 1995 (20.12.95) US 08/661,393 7 June 1996 (07.06.96) US			<b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(71) Applicant: ICOS CORPORATION [US/US]; 22021 20th Avenue S.E., Bothell, WA 98021 (US).			
(72) Inventors: GRAY, Patrick, W.; 1600 40th Avenue, Seattle, WA 98122 (US). SCHWEICKART, Vicki, L.; 1421 Orange Place North, Seattle, WA 98109 (US). RAPORT, Carol, J.; 2300 211th Street, S.E., Bothell, WA 98021 (US).			(88) Date of publication of the international search report: 12 September 1997 (12.09.97)
(74) Agent: BORUN, Michael, F.; Marshall, O'Toole, Gerstein, Murray & Borun, 6300 Sears Tower, 233 South Wacker Drive, Chicago, IL 60606-6402 (US).			
(54) Title: CHEMOKINE RECEPTORS 88-2B[CKR-3] AND 88C AND THEIR ANTIBODIES			
(57) Abstract <p>The present invention provides polynucleotides that encode the chemokine receptors 88-2B or 88C and materials and methods for the recombinant production of these two chemokine receptors. Also provided are assays utilizing the polynucleotides which facilitate the identification of ligands and modulators of the chemokine receptors. Receptor fragments, ligands, modulators, and antibodies are useful in the detection and treatment of disease states associated with the chemokine receptors such as atherosclerosis, rheumatoid arthritis, tumor growth suppression, asthma, viral infection, AIDS, and other inflammatory conditions.</p>			

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 96/20759

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 C12N15/12 C07K14/705 C07K16/28 C12N5/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 C12N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 270, 14 July 1995, MD US, pages 16491-16494, XP002029908 COMBADIÈRE, C. ET AL. : "Cloning and functional expression of a human eosinophil CC Chemokine Receptor" see the whole document ---	1-15
P,X	WO 96 22371 A (LEUKOSITE INC ;BRIGHAM & WOMENS HOSPITAL (US); CHILDRENS MEDICAL C) 25 July 1996 see claims 1-29,38,39 ---	1-15
P,X	WO 96 39437 A (HUMAN GENOME SCIENCES INC ;LI YI (US); RUBEN STEVEN M (US)) 12 December 1996 see page 33, line 7 - page 34, line 11; claim 1 ---	16-50

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

15 July 1997

Date of mailing of the international search report

22.07.97

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 96/20759

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	BIOCHEMISTRY, MAR 19 1996, 35 (11) P3362-7, UNITED STATES, XP002035224 SAMSON M ET AL: "Molecular cloning and functional expression of a new human CC-chemokine receptor gene." see the whole document ---	16-50
P,X	NATURE, JUN 20 1996, 381 (6584) P667-73, ENGLAND, XP002035225 DRAGIC T ET AL: "HIV-1 entry into CD4+ cells is mediated by the chemokine receptor CC-CKR-5 [see comments]" see the whole document ---	16-50
P,X	NATURE, JUN 20 1996, 381 (6584) P661-6, ENGLAND, XP002035226 DENG H ET AL: "Identification of a major co-receptor for primary isolates of HIV-1 [see comments]" see the whole document -----	16-50

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 96/20759

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see continuation-sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
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4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

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- ☒ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 96/ 20759

FURTHER INFORMATION CONTINUED FROM PCT/ISA/210

1. Claims: 1-15 A chemokine receptor 88-2B [ CKR-3 chemokine receptor], sequence encoding said receptor. Expression vector and recombinant host cells for the production of chemokine receptor 88-2B [ CKR-3 chemokine receptor]. Antibodies immunoreactive with chemokine receptor 88-2B [ CKR-3 chemokine receptor]. Hybridoma producing said antibodies.
2. Claims: 16-50 chemokine receptor 88-C, sequence encoding said receptor. Expression vector and recombinant host cells for the production of chemokine receptor 88-C. Antibodies immunoreactive with chemokine receptor 88-C. Hybridoma producing said antibodies

# INTERNATIONAL SEARCH REPORT

information on patent family members

International Application No

PCT/US 96/20759

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9622371 A	25-07-96	AU 5020296 A	07-08-96
WO 9639437 A	12-12-96	AU 2663295 A	24-12-96